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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications
under 37 CFR 1.53(b))

Title of Invention

Method and System for Identifying Program
Module Functionality Needed by a Computer
when Disconnected from a Network

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APPLICATION ELEMENTS

1. ☐ Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)
2. ☒ Specification, Claims,
and Abstract Total Pages 20
Total Sheets 4
3. ☒ Drawings
4. Oath or Declaration Total Pages 4
 - a. ☐ Newly executed (original or copy)
 - b. ☐ Copy from prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 17
completed)
[Note Box 5 Below]
(i) ☐ DELETION OF INVENTOR(S)
Signed statement attached
deleting inventor(s) named in the
prior application, see 37 CFR
1.63(d)(2) and 1.33(b).
5. ☐ Incorporation by Reference
(usable if Box 4b is checked)
The entire disclosure of the prior application, from
which a copy of the oath or declaration is supplied
under Box 4b, is considered as being part of the
disclosure of the accompanying application and is
hereby incorporated by reference therein.
6. ☐ Microfiche Computer Program (Appendix)
7. ☐ Nucleotide and/or Amino Acid Sequence
Submission (if applicable, all necessary)
 - a. ☐ Computer Readable Copy
 - b. ☐ Paper Copy (identical to computer copy)
 - c. ☐ Statement verifying identity of
above copies

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ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet &
document(s))
9. ☐ 37 CFR 3.73(b) Statement
(when there is an assignee)
☐ Power of Attorney by assignee
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement (IDS)
PTO-1449
☐ Copies of IDS Citations
12. ☐ Preliminary Amendment
13. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
14. ☐ Small Entity Statement(s)
☐ Statement filed in prior application
Status still proper and desired
15. ☐ Certified Copy of Priority Document(s)
16. ☐ Other: _____

17. If a **CONTINUING APPLICATION**, check appropriate box and supply the requisite information:
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: _____

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1
2
3 **METHOD AND SYSTEM FOR IDENTIFYING**
4 **PROGRAM MODULE FUNCTIONALITY NEEDED BY**
5 **A COMPUTER WHEN DISCONNECTED FROM A**
6 **NETWORK**

7
8 **Technical Field**

9 This invention relates to identifying program module
10 functionality needed by a computer. More particularly, this
11 invention relates to a method and system for identifying the
12 program module functionality needed by a computer when
13 disconnected from a network and storing this program module
14 functionality on the computer's hard drive.

15
16 **Background of the Invention**

17 Mobile or laptop computing has become more
18 popular as mobile computers have decreased in price and
19 increased in performance. Many mobile computer users use their
20 computers to connect to a network at the office. These same users
21 may disconnect from the network to use their mobile computers
22 when away from the office. Mobile computing demands that
23 users have access in a disconnected environment to the data and
24 the applications that are typically available in a connected
25 environment, i.e., when connected to a network. While preparing
26 for offline use, users generally think in terms of documents, not
27 in terms of applications. Mobile computers do not provide an
28 intelligent list of applications which may be needed when the
29 mobile computer is disconnected from the network.

30 As mobile computing becomes prevalent, the
31 transition between network-connected use and offline use should
32 be transparent, quick and painless. A mobile computer user
33 should not have to worry about the management of applications
34 and documents on her laptop. The mobile computer user needs to
35 make sure that the documents and applications required when the

1 unit is offline are on the mobile computer before disconnecting it.
2 Thus, there is a need for a method and system for managing the
3 documents and files that are needed on a mobile computer when
4 the mobile computer is disconnected from a network.

5 However, having needed files and documents on a
6 mobile computer does not mean that the application program
7 functionality needed to run these documents is locally available,
8 i.e. stored on the mobile computer. Thus, there is a need for a
9 method and system for intelligently identifying a list of documents
10 the user may need when offline and mapping the documents to the
11 necessary application program functionality needed to execute the
12 documents.

13 Thus, given a set of documents, there is a need for a
14 method and system for mapping the set of documents to a set of
15 application program functionality required to run the set of
16 documents. There is a further need for a method and system for
17 a method and system for intelligently identifying a list of
18 documents that may be needed by a user when off-line, i.e.,
19 disconnected from a network.

20 21 **Summary of the Invention**

22 The present invention satisfies the above described
23 needs by providing a method and system for identifying the
24 program application functionality needed by a computer when
25 disconnected from a network and storing this program module
26 functionality on the computer.

27 In one aspect, the invention identifies a handler
28 routine for each file saved to a local computer, or marked to be
29 available off-line, and sending each file to the identified handler
30 routine. The handler routine may then determine the application
31 program functionality required to execute each file, i.e., read and
32 edit a file. The application program functionality may comprise
33 products, features and components as defined below in the
34 detailed description.

1 In another aspect, the invention identifies a handler
2 routine for each file in the set of files by identifying a type for the
3 file by mapping a file extension for each file to a class
4 identification. Then, for each file in the set of files, the class
5 identification is mapped to a handler routine and each file is sent
6 to the mapped handler routine.

7 In still another aspect, the present invention
8 comprises a document identification engine (DIE) for creating a
9 list of files stored locally on a computer. The DIE sends the list
10 of files to a document-mapping engine (DME), which identifies a
11 proper handler routine for each file in the list of files. The DME
12 then sends each file to the proper handler routine(s). The handler
13 routine(s) identifies the application program functionality needed
14 to execute each file and sends a list of needed application
15 functionality to the DME or a migration engine (ME). The ME
16 determines the current status of the needed application
17 functionality. If the status of the needed application functionality
18 indicates that the needed application program functionality is not
19 installed locally on the computer, then the ME may install the
20 needed application program functionality to the computer.

21 These and other features, advantages, and aspects of
22 the present invention may be more clearly understood and
23 appreciated from a review of the following detailed description of
24 the disclosed embodiments and by reference to the appended
25 drawings and claims.

26 **Brief Description of the Drawings**

27 Fig. 1 is a block diagram of a computer that provides
28 the exemplary operating environment for the present invention.

29 Fig. 2 is a block diagram of typical program modules
30 that may be included in an exemplary embodiment of the present
31 invention.

32 Fig. 3 is a flowchart illustrating a method for
33 identifying application program features needed when a computer
34

1 is offline in accordance with an embodiment of the present
2 invention.

3 Fig. 4 is a flowchart illustrating a method for
4 identifying application program features needed when a computer
5 is offline in accordance with another embodiment of the present
6 invention.

7 8 **Detailed Description**

9 The present invention is directed to a method and
10 system for identifying the application program functionality that
11 may be needed to use a document, or file, when disconnected
12 from a network environment. In one embodiment, the operating
13 system may automatically identify the documents that will likely
14 be needed by the user when his computer is disconnected from the
15 network. The invention may be incorporated into an operating
16 system program module. Briefly described, the operating system
17 allows a user to select the documents, or files, that will be needed
18 by the user when his computer is disconnected from the network.
19 It should be understood that different parts of the operating
20 system, and even other applications, may perform the steps of the
21 invention described herein. In one embodiment, the invention
22 identifies the application program functionality that will be
23 needed to run the documents selected by the user when the
24 computer is disconnected from the network. The present
25 invention may also identify whether this application program
26 functionality is stored locally on the computer, and, if not, the
27 present invention may store this application program functionality
28 locally on the computer.

29 Having briefly described embodiments of the present
30 invention, an exemplary operating environment for the present
31 invention is described below.

32 33 **Exemplary Operating Environment**

34 Referring now to the drawings, in which like
35 numerals represent like elements throughout the several figures,

1 aspects of the present invention and the exemplary operating
2 environment will be described.

3 Fig. 1 and the following discussion are intended to
4 provide a brief, general description of a suitable computing
5 environment in which the invention may be implemented. While
6 the invention will be described in the general context of an
7 operating system that runs in conjunction with a personal
8 computer, those skilled in the art will recognize that the invention
9 also may be implemented in combination with other program
10 modules. Generally, program modules include routines,
11 programs, components, data structures, etc. that perform
12 particular tasks or implement particular abstract data types.
13 Moreover, those skilled in the art will appreciate that the
14 invention may be practiced with other computer system
15 configurations, including hand-held devices, multiprocessor
16 systems, microprocessor-based or programmable consumer
17 electronics, minicomputers, mainframe computers, and the like.
18 The invention may also be practiced in distributed computing
19 environments where tasks are performed by remote processing
20 devices that are linked through a communications network. In a
21 distributed computing environment, program modules may be
22 located in both local and remote memory storage devices.

23 With reference to Fig. 1, an exemplary system for
24 implementing the invention includes a conventional personal
25 computer **20**, including a processing unit **21**, a system memory
26 **22**, and a system bus **23** that couples the system memory to the
27 processing unit **21**. The system memory **22** includes read only
28 memory (ROM) **24** and random access memory (RAM) **25**. A
29 basic input/output system **26** (BIOS), containing the basic routines
30 that help to transfer information between elements within the
31 personal computer **20**, such as during start-up, is stored in ROM
32 **24**. The personal computer **20** further includes a hard disk drive
33 **27**, a magnetic disk drive **28**, e.g., to read from or write to a
34 removable disk **29**, and an optical disk drive **30**, e.g., for reading
35 a CD-ROM disk **31** or to read from or write to other optical

1 media. The hard disk drive 27, magnetic disk drive 28, and
2 optical disk drive 30 are connected to the system bus 23 by a
3 hard disk drive interface 32, a magnetic disk drive interface 33,
4 and an optical drive interface 34, respectively. The drives and
5 their associated computer-readable media provide nonvolatile
6 storage for the personal computer 20. Although the description
7 of computer-readable media above refers to a hard disk, a
8 removable magnetic disk and a CD-ROM disk, it should be
9 appreciated by those skilled in the art that other types of media
10 which are readable by a computer, such as magnetic cassettes,
11 flash memory cards, digital video disks, Bernoulli cartridges, and
12 the like, may also be used in the exemplary operating
13 environment.

14 A number of program modules may be stored in the
15 drives and RAM 25, including an operating system 35, one or
16 more application programs 36, installer program module 37,
17 program data 38, and other program modules (not shown).

18 A user may enter commands and information into the
19 personal computer 20 through a keyboard 40 and pointing
20 device, such as a mouse 42. Other input devices (not shown) may
21 include a microphone, joystick, game pad, satellite dish, scanner,
22 or the like. These and other input devices are often connected to
23 the processing unit 21 through a serial port interface 46 that is
24 coupled to the system bus, but may be connected by other
25 interfaces, such as a game port or a universal serial bus (USB). A
26 monitor 47 or other type of display device is also connected to
27 the system bus 23 via an interface, such as a video adapter 48. In
28 addition to the monitor, personal computers typically include
29 other peripheral output devices (not shown), such as speakers or
30 printers.

31 The personal computer 20 may operate in a
32 networked environment using logical connections to one or more
33 remote computers, such as a remote computer 49. The remote
34 computer 49 may be a server, a router, a peer device or other
35 common network node, and typically includes many or all of the

elements described relative to the personal computer 20, although only a memory storage device 50 has been illustrated in Fig. 1. The logical connections depicted in Fig. 1 include a local area network (LAN) 51 and a wide area network (WAN) 52. Such networking environments are commonplace in offices, enterprise-wide computer networks, Intranets and the Internet.

When used in a LAN networking environment, the personal computer 20 is connected to the LAN 51 through a network interface 53. When used in a WAN networking environment, the personal computer 20 typically includes a modem 54 or other means for establishing communications over the WAN 52, such as the Internet. The modem 54, which may be internal or external, is connected to the system bus 23 via the serial port interface 46. In a networked environment, program modules depicted relative to the personal computer 20, or portions thereof, may be stored in the remote memory storage device. It will be appreciated that the network connections shown are exemplary and other means of establishing a communications link between the computers may be used.

Discussion of Terminology

Before discussing Fig. 2, a brief discussion of terminology is needed. In accordance with an exemplary embodiment of the present invention, the installer program module 37 recognizes three principal elements: products, features and components. The installer program module 37 is also described in co-pending application serial no. _____, entitled "Use of Relational Databases for Software Installation", which is assigned to the same assignee, filed on September 21, 1998, and incorporated by reference herein.

A "product" represents an entire application program, such as the "MICROSOFT OFFICE" application program marketed by Microsoft Corporation of Redmond, Washington. Each product has a globally unique identifier known

1 as a Product Code which allows each product to be distinguished.
2 Each product is made up of one or more features.

3 A feature is a granular piece of the product that a
4 user may choose to install. Features typically correspond roughly
5 to the functional features of the product itself, such as a "Proofing
6 Tools" feature or a "WORD" feature. Each feature is essentially
7 a grouping of components and may also include other features.
8 Features need not be globally unique, and therefore may be
9 identified by any appropriate means, such as with a textual feature
10 identifier.

11 A component is a collection of resources, such as
12 files or registry keys, that are all installed or uninstalled as a unit.
13 Components are the building blocks of the product that are not
14 exposed to the user. A resource, such as a file or a registry key,
15 may be part of only one component. Two components may not
16 share the same resource whether they are part of the same
17 product or parts of different products. Each component has a
18 globally unique identifier known as a Component Code. One
19 resource within the component is designated as a key file. The
20 key file may be any resource, such as a file or registry key,
21 within the component.

22 As used herein, application program functionality
23 will be used to refer to products, features and components.

24 25 **Identifying Needed Files and Application Program** 26 **Functionality**

27 As mentioned above in the Background, application
28 program modules do not currently provide a management tool
29 that allows users to identify their off-line application needs, and
30 synchronize their data with the applications required to use the
31 data. In addition, data formats are becoming increasingly
32 complex and users need to have a way to manage complex data
33 formats, such as OLE structured storage with embedded OLE
34 objects or HTML pages with multiple links. Moreover, as
35 described above in the Terminology section, some application
36 program modules now have functionality that may be installed on-

1 demand, so there may be more instances of disconnected
2 computers not being able to run documents because the needed
3 functionality may not be installed on the computer. The present
4 invention allows application program modules to be intelligent
5 about document and feature management and, thus, reduces the
6 offline user's burden.

7 The invention is a system and method for identifying
8 a list of documents, or files, and application program module
9 functionality that a user may need when the computer is
10 disconnected from a network. The invention may be used with
11 laptop computers or desktop computers which are connected to a
12 network.

13 In one embodiment, the present invention observes
14 the user's usage pattern to make intelligent guesses regarding
15 which documents should be available offline and allows the user
16 to modify the selection. In another embodiment, the present
17 invention identifies class identifications (type and owner) of these
18 selected documents. In still another embodiment, the present
19 invention maps these class identifications to the appropriate
20 product and feature identifications needed to run, or execute,
21 these documents.

22 Referring now to Fig. 2, a block diagram of typical
23 program modules that may be included in an exemplary
24 embodiment **200** of the present invention is illustrated. Ensuring
25 that the appropriate documents and the required application
26 program functionality are available offline may begin by choosing
27 documents to be made available offline. This is typically
28 performed via a Document Identification Engine (DIE) **205**.

29 The DIE **205** comprises a set of rules and/or a user
30 interface to determine a default list of folders and files the user
31 will have when offline. This default list typically includes, but is
32 not limited to:

- 33 • The "My documents" folder;
- 34 • Recently used documents;

- 1 • Documents and folders that the user has specifically marked as
- 2 “Need when off-line”. For example, every time the user
- 3 creates/publishes a document, he or she can mark it as “Need
- 4 when off-line”;
- 5 • The “Desktop” folder; and
- 6 • Dependent files, e.g., links and embeddings in a document,
- 7 macros that are associated with command bars, etc.

8 Given the above set of document locations, or a
9 similar set, the DIE **205** may yield a list of documents required
10 for offline use. Multiple DIEs may be required due to different
11 types of storage (for example, web servers, file servers, MAPI
12 stores, etc.).

13 This list generated by the DIE **205** is then collected
14 by a Document-Mapping Engine (DME) **210**. The DME **210**
15 uses the list to determine which functionalities and applications the
16 user requires. The DME identifies document classes and compiles
17 a list of class identifications.

18 The DME **210** may yield a set of program module
19 functionalities which is required for the selected offline
20 documents. For each document in the list furnished by the DIE
21 **205**, the DME **210** may identify the class ID of the type of
22 document based on document extensions. The DME **210** may
23 also identify the class ID of the type of document by using more
24 than document extensions. For example, for OLE-composed
25 documents, the class ID is actually stored in the file itself. It may
26 then compile this into a list of class identifications to be handed
27 off to the specific document handlers.

28 As mentioned above, the Document Mapping Engine
29 (DME) **210** may identify the class IDs for each document
30 identified by the Document Identification Engine (DIE) **205**.
31 However, it should be understood that mapping a document to a
32 proper handler routine may be performed several different ways,
33 such as by using a document extension, etc. Each document will
34 then be handed to a handler **215** specific to its document type.
35 The handler may then map the file to product and feature

1 identifications known by the installer program module **37**. As
2 mentioned, specific document handlers **215** may perform this
3 mapping of document class identifications. Each different handler
4 may return product and feature mappings for a specific document
5 type. For example, one or more OFFICE handlers may
6 understand OFFICE file formats and be able to map format
7 contents to specific OFFICE features.

8 The handler **215** may identify the product and
9 features necessary for the specified document, and return the
10 required product and features to the DME **210**. The DME will
11 collect all of the product and feature identifications for all of the
12 documents, and may sort them according to frequency of the
13 occurrence of any given product and feature ID. However, the
14 handlers themselves may also return importance rankings instead
15 of leaving the decision of importance to the DME. The product
16 and feature identifications are then sent to a Migration Engine
17 **220** (ME).

18 The Migration Engine (ME) **220** may be able to
19 identify the application functionality that is most critical given the
20 document types that are most prevalent. This list will then be
21 used by the Migration Engine to install the necessary application
22 functionality. It should also be understood that decisions could be
23 made based on factors other than which document types are most
24 prevalent.

25 In the event that the ME determines that it cannot
26 install all the requested application functionality due to a lack of
27 disk space, it will return the list of documents to the DIE. The
28 DIE will then present the user with an interface that allows them
29 to modify their selection of documents.

30 Referring now to Fig. 3, a flowchart illustrating a
31 method **300** for identifying application program functionality
32 needed when a computer is offline in accordance with an
33 embodiment of the present invention will be described. The
34 method begins at start step **305** and proceeds to step **310**. At step
35 **310**, the files, or documents, to be stored locally on the computer

1 is determined. It should be understood that the process of
2 determining the files to be stored locally on the computer may be
3 a manual process, such as the user storing files locally on the
4 computer. It should also be understood that the process of
5 determining the files to be stored locally on the computer may be
6 an automatic process. For example, the operating system may
7 include a set of rules for determining a default list of folders and
8 files the user will need when offline.

9 After the files to be stored locally on the computer
10 are determined at step 310, the method proceeds to step 315.
11 The types of files stored locally on the computer are identified
12 and the files are sent to a proper handler routine at step 315. For
13 example, all WORD files stored locally on the computer are sent
14 to a handler that understands WORD documents. The method
15 then proceeds to step 320.

16 At step 320, the application program functionality
17 needed to execute the files is identified by the handler routine(s).
18 The method 300 then proceeds to step 325.

19 At step 325, the application program functionality
20 needed, and not already installed locally, is installed locally on the
21 computer. The method ends at step 399.

22 Referring now to Fig. 4, a flowchart illustrating a
23 method 400 for identifying application program functionality
24 needed when a computer is offline in accordance with an
25 embodiment of the present invention will be described.

26 The method 400 begins at start step 405 and
27 proceeds to step 410 where a Document Identification Engine
28 (DIE) determines the files, or documents, to be stored on the local
29 computer and the types of files that are to be stored locally (such
30 as .doc, .htm, .xls). The method 400 then proceeds to step 415.
31 The DIE may be triggered when the user shuts down the
32 computer or undocks the computer. The DIE may also be
33 triggered manually by the user from the control panel, start
34 menu, or otherwise.

At step **415**, the DIE creates a list of files determined at step **410** and these files are stored locally to the computer if they are not already stored locally. The method **400** then proceeds to step **420**.

At step **420**, the list of files created by the DIE at step **415** is transferred to a Document Mapping Engine (DME). The method **400** then proceeds to step **425**.

At step **425**, the DME identifies a handler routine for each file. It should be understood that the DME may identify the type of files by mapping the file extension (such as .doc, .http, .xls) to a class identification. It should be understood that each class identification may be associated with a handler routine. It should also be understood that the proper handler routine may be identified by other means, such as by OLE-compound document CLSID. The method **400** then proceeds to step **430**.

At step **430**, the DME sends each file to its proper handler routine for processing. The method **400** then proceeds to step **435**. At step **435**, each handler routine is used to identify specific needs and requirements for a particular file. For example, certain application program functionality may be needed to execute a particular file while other application program functionality may be needed to execute other files. Each handler routine maps a file itself to the application program features that need to be installed for the file to execute. The method **400** then proceeds to step **440**.

At step **440**, the handler routines return the application program functionality needed for each file to the DME so that the DME has a complete list of all the application program functionality needed to execute the saved local files. The method then proceeds to step **445**. It should be understood that it is possible that the DME will need to send one or more new files to a handler routine in response to the instructions from the handler routines. For example, an EXCEL spreadsheet may contain an embedded WORD document. In that case, the EXCEL handler routine may not recognize the WORD document and may

1 return the WORD document to the DME to determine the proper
2 handler routine for the WORD document. The DME would then
3 transmit the WORD document to the proper handler.

4 At step 445, the DME 210 transmits the list of
5 needed application program functionality to a migration engine
6 (ME) 220. The method then proceeds to step 450. At step 450,
7 the ME 220 determines the current status of the application
8 program functionality, i.e., whether the functionality is available
9 and installed locally. The method then proceeds to step 455.

10 At step 455, any application program functionality
11 that is not installed locally is installed to the local computer, if it
12 is available. The method 400 then ends at step 499.

13 Thus, from the foregoing description, it will be
14 apparent to those skilled in the art that the present invention
15 provides a method and system for identifying a set of application
16 program functionality that may be needed on a computer by a
17 user when the computer is disconnected from a network
18 environment, or when a computer does not have a CD-ROM
19 connection. For example, a home user may have a laptop
20 computer with a docking station, but not have the computer
21 connected to a network. When at home, the user can use the CD-
22 ROM drive attached to the docking station to run application bits
23 "from the source." However, when disconnected from the
24 docking station, the laptop computer has no CD-ROM drive and
25 the user will need the bits to be local.

26 It should be understood that the storing of the
27 application functionality to the local computer may be done on a
28 priority basis to deal with storage constraints. For example, if six
29 word processing documents are stored locally and one spreadsheet
30 document is stored locally, then the application functionality for
31 the word processor should be stored to the local computer before
32 attempting to store the spreadsheet functionality. It should also be
33 understood that the user may be presented with the option of
34 determining which applications need to be stored locally if there
35 are storage constraints.

1 It should also be understood that if a single file
2 comprises other types of files, then the handler will be able to
3 identify these other type files or send them back to the DME so
4 that they may be sent to a proper handler routine. For example,
5 if a word processing document comprises a spreadsheet document,
6 then the handler will be able to identify these types of files and
7 send them to their proper handler. Thus, the present invention
8 will be able to identify when a single document needs multiple
9 application functionality. This concept may be referred to as
10 embedded mapping. Thus, for any sub-part of a file (such as an
11 OLE sub-storage or a hyperlink), the handler may send the sub-
12 part back to the DME which may try to map it to a different
13 handler.

14 It will also be understood that alternative
15 embodiments will become apparent to those skilled in the art to
16 which the present invention pertains without departing from its
17 spirit and scope. Accordingly, the scope of the present invention
18 is defined by the appended claims rather than the foregoing
19 description.

Claims

What is claimed is:

1. A method for identifying application functionality needed to run a set of files when a computer is disconnected from a network, the method comprising the steps of:
for each file in the set of files, identifying a handler routine and sending each file to the identified handler routine; and
for each file in the set of files, in the mapped handler routine, determining the application program functionality required to execute each file.

2. The method of Claim 1, wherein the application functionality comprises products, features and components.

3. The method of Claim 1, further comprising the steps of:
identifying the set of files; and
storing the set of files on the computer.

1
2 4. A method for identifying a set of files and
3 application functionality needed to run the set of files when the
4 computer is disconnected from a network, the method comprising
5 the steps of:

6 determining the set of files to be stored locally on the
7 computer;

8 storing the set of files locally on the computer;

9 for each file, identifying application functionality
10 needed to run each file; and

11 installing the identified application functionality
12 locally on the computer.

13
14 5. The method of Claim 4, wherein the step of
15 determining the set of files to be stored locally on the computer
16 comprises receiving user input, wherein the user input
17 corresponds to a plurality of files that are to be stored locally on
18 the computer.

19
20 6. The method of Claim 4, wherein the step of
21 determining the set of files to be stored locally on the computer
22 comprises the steps of:

23 searching a plurality of files in a plurality of storage
24 locations on the computer;

25 determining whether each file found in the plurality
26 of storage locations is to be stored locally on the computer; and

27 if so, then adding the file to the set of files.

28
29 7. The method of Claim 4, wherein the step of
30 identifying application functionality needed to run each file
31 comprises the steps of:

32 identifying a type for each file;

33 associating each type with a handler routine; and

34 sending each file to its associated handler routine.

35

1 8. The method recited in Claim 7, wherein the
2 handler routine comprises instructions for scanning each file and
3 determining the application functionality that is needed to execute
4 each file.

6 9. The method recited in Claim 8 wherein
7 application functionality comprises programs, features and
8 components.

1
2 10. A method for identifying a set of application
3 functionality to be stored on a computer connected to a network,
4 comprising the steps of:

5 causing a document identification engine (DIE) to
6 create a list of a plurality of files stored locally on the computer;

7 sending the list of files from the DIE to a document
8 mapping engine (DME);

9 causing the DME to identify a proper handler routine
10 for each file in the list of files;

11 sending each file from the DME to the proper
12 handler routine;

13 causing the handler routine to identify the application
14 functionality needed to execute each file;

15 sending a list of needed application program
16 functionality for the handler routine to the DME;

17 sending a list of needed application program
18 functionality from the DME to a migration engine (ME);

19 causing the ME to determine the current status of the
20 needed application functionality; and

21 if the status of the needed application functionality
22 indicates that the needed application functionality is not installed
23 locally on the computer, then causing the ME to install the needed
24 application functionality to the computer.

25
26 11. A computer-readable medium comprising
27 computer-readable instructions, which when executed, performs
28 the steps of Claim 10.
29
30
31

**METHOD AND SYSTEM FOR IDENTIFYING
PROGRAM MODULE FUNCTIONALITY NEEDED BY
A COMPUTER WHEN DISCONNECTED FROM A
NETWORK**

Abstract of the Disclosure

Identifying program module functionality needed by a computer when disconnected from a network is disclosed. A document identification engine (DIE) creates a list of files stored locally on the computer. The DIE sends the list of files to a document mapping engine (DME). The DME identifies a proper handler routine for each file in the list of files and send each file to the proper handler routine(s). The handler routine(s) identifies the application functionality needed to execute each file. The application functionality may include products, features and components. The handler routine sends a list of needed application functionality to the DME. If needed, the DME may send any sub-parts of files to another handler for further processing, such as when a word processing document includes a spreadsheet sub-part. The DME also can send the list of needed application functionality to a migration engine (ME). The ME determines the current status of the needed application functionality. If the status of the needed application functionality indicates that the needed application functionality is not installed locally on the computer, then the ME installs the needed application functionality to the computer.

Attorney Docket: 13237-2305

MS No. 36711.1

FIG. 1

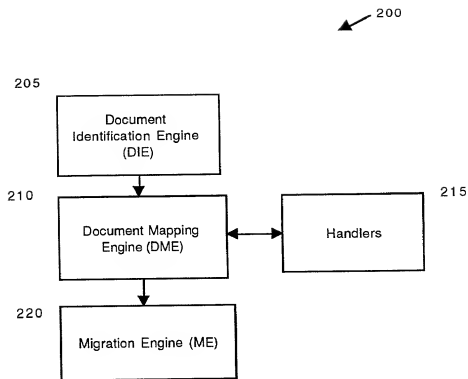


Fig. 2

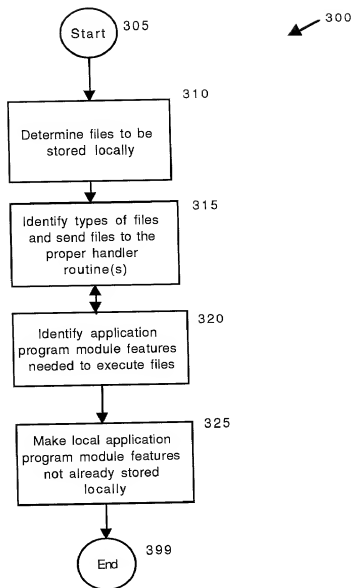


Fig. 3

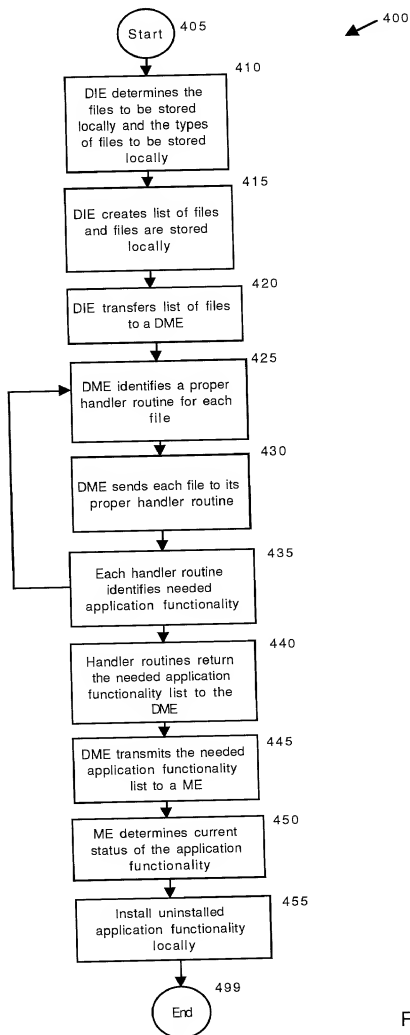


Fig. 4

DECLARATION AND POWER OF ATTORNEY

Attorney's Docket No. 13237-2305/MS #36711

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I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I do not know and do not believe that the same was ever known or used by others in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to the date of this application. I further state that the invention was not in public use or on sale in the United States of America more than one year prior to the date of this application. *I understand that I have a duty of candor and good faith toward the Patent and Trademark Office, and I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56.*

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<u>none</u>			Yes _____ No _____

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I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

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M. Todd Mitchem, Esq.

Full name of first joint inventor: <u>Jeffrey C. Belt</u>	Citizenship: <u>USA</u>
Inventor's signature	Date:
Residence and Post Office Address: <u>15600 NE Eighth Street #B-1, Apt. 480, Bellevue, WA 98008</u>	

☒ Additional inventors are being named on separately numbered sheets attached hereto.

DECLARATION AND POWER OF ATTORNEY

Attorney's Docket No. 13237-2305/MS #36711

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M. Todd Mitchem, Esq.

Full name of first joint inventor: Noah B. Edelstein	Citizenship: USA
Inventor's signature	Date:
Residence and Post Office Address: 957 - 18 th Avenue East, Seattle, WA 98112	
<input checked="" type="checkbox"/> Additional inventors are being named on separately numbered sheets attached hereto.	

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M. Todd Mitchem, Esq.

Full name of first joint inventor: <u>Maithreyi Lakshmi Ratan</u>	Citizenship: <u>USA</u>
Inventor's signature	Date:
Residence and Post Office Address: <u>19112 NE 130th Street, Redmond, WA 98052</u>	



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